WHAT IS CLAIMED IS:

1. A scalable motion controller for controlling a plurality of servo motors in a motion control system, the scalable motion controller comprising:

means for inserting and removing one or more motion control processors from the scalable motion controller; and

means for stacking a plurality of scalable motion controllers.

2. The scalable motion controller of claim 1, wherein the scalable motion controller is PC/104 compliant.

3. The scalable motion controller of claim 1, further comprising means for selecting a plurality of motion control processors for coordinated motion.

4. A motion control system comprising:

a motion unit wherein the motion unit comprises a motor connected to an encoder and an amplifier; and

a scalable motion controller connected to the motion unit wherein the scalable motion controller receives first signals from the encoder and outputs second signals to the amplifier.

5. The motion control system of claim 4, wherein the scalable motion controller comprises a plurality of dip sockets arranged for inserting and removing one or more motion control processors.

6.   The motion control system of claim 4, wherein the scalable motion controller comprises means for inserting and removing one or more motion control processors from the scalable motion controller.

7.   The motion control system of claim 4, wherein the scalable motion controller comprises a connector interface comprising a plurality of male and a plurality of female connectors arranged for stacking a plurality of motion controllers.

8.   The motion control system of claim 4, wherein the scalable motion controller comprises means for stacking a plurality of scalable motion controllers.

9.   The motion control system of claim 4, wherein the scalable motion controller is PC/104 compliant.

10.   The motion control system of claim 4, wherein the scalable motion controller comprises means for selecting a plurality of motion control processors for coordinated motion.

11.   The motion control system of claim 4, wherein the scalable motion controller comprises:

a plurality of programmable logic devices wherein each of the plurality of programmable logic devices provides a chip select signal to a chip select input of a corresponding motion control processor;

a storage device for storing the chip select signals for each of the plurality of programmable logic devices; and

a coordinated motion device for causing the storage device to output the chip select signals to the plurality of programmable logic devices at substantially the same time based on a coordinated motion address.

12.   The motion control system of claim 11, wherein the storage device is a shift register.

13.   A scalable motion controller for controlling a plurality of servo motors in a motion control system, the scalable motion controller comprising:

a plurality of dip sockets arranged for inserting and removing one or more motion control processors; and

a connector interface comprising a plurality of male and a plurality of female connectors arranged for stacking a plurality of scalable motion controllers.

14.   The scalable motion controller of claim 13, wherein the scalable motion controller is PC/104 compliant.

15.   The scalable motion controller of claim 13, further comprising:

a plurality of programmable logic devices wherein each plurality of programmable logic devices provides chip select signal to a chip select input of a corresponding motion control processor;

a storage device for storing the chip select signals for each plurality of programmable logic devices; and

a coordinated motion device for causing the storage device to output the chip select signals to the plurality of programmable logic devices at substantially the same time based on a coordinated motion address.

16.   The scalable motion controller of claim 15, wherein the storage device is a shift register.

17.   A method for providing a scalable motion controller:

providing connectors for connecting and disconnecting a plurality of motion control processors from the scalable motion controller; and

providing an interface for stacking a plurality of scalable motion controllers.